THE [HNCS]/[HSCN] RATIO IN SGRB2 AND TMC-1

G. ADANDE, D.T. HALFEN, L.M. ZIURYS, *Department of Chemistry, Steward Observatory, University of Arizona, Tucson.*

The formation of the metastable isomer pair, HNCS and HSCN, has been investigated in the warm molecular cloud SgrB2 and the dense cold core TMC-1. In Sagitarius B2, the $8_{0,8}$–$7_{0,7}$ and $9_{0,9}$–$8_{0,8}$ transitions of both isomers have been mapped over a $5*3$ region around the central hot core SgrB2(M), using the Arizona Radio Observatory (ARO) 12m telescope. In TMC-1, the $8_{0,8}$–$7_{0,7}$ and $7_{0,7}$–$6_{0,6}$ lines of both isomers have been detected. Both molecules show extended emission across SgrB2 with a ratio [HNCS]/[HSCN] $1-10$. In TMC-1, the ratio is 1. The high abundance of the metastable isomer HSCN relative to HNCS suggests that the main production route to both molecules is electron recombination from the ionic precursor HNCSH+, in analogy to HCN and HNC.